## REMARKS

Applicants have amended claims 1-3, 4-10, and withdrawn claims 3 and 6. Claims 13-24 were previously withdrawn. Claims 1, 2, 4, 5 and 7-12 are thus currently pending reconsideration.

Amendments to the Claims

Claims 1 and 7 are amended to recite "A method for removing contaminants from water in an ambient environment," wherein the method employs a "water distillation unit" and conveys heat output from a thermal cycle engine to the water distillation unit "in such a manner as to prevent heat flow from the water distillation unit to the ambient environment."

These amendments clarify the nature of the claimed invention, as described, on page 11 of the application, in the following terms:

> The exhaust gas, designated by arrow **502**, blows across finned heat exchanger **506**, thereby heating the source water stream **508** as it travels to still evaporator **510**. The hot gas **512** that fills the volume surrounded by insulated enclosure **504** essentially removes all thermal loss from the still system since the gas temperature within the insulated cavity is hotter than surface **514** of the still itself. Thus, there is substantially no heat flow from the still to the ambient environment, and losses on the order of 75 W for a still of 10 gallon/hour capacity are thereby recovered.

Claim 8 has been amended similarly.

Claim 4 has been amended to include the phrase "for removing contaminants from water" in the preamble, for reasons of clarity.

Claims 2, 3, 5 and 6 have been amended to delete the word "exhaust" in the phrase "wherein the step of conveying ~~exhaust~~ heat output" to bring dependent claims 2, 3, 5 and 6 into conformity with independent claim 1 with respect to the term "heat output".

35 U.S.C. § 112, para. 2 Rejections – Indefiniteness

Claims 3 and 6 have been withdrawn. Applicants therefore request withdrawal of the rejection based on indefiniteness.

35 U.S.C. § 102 (e) Rejections – Anticipation

Claims 1-2, 4-5 and 7-12 are rejected as being anticipated by US 7,036,314 to Hoffjann et al.

Hoffjann teaches that the "exhaust **5** of the high temperature fuel cell **1** is usable in *one of several gas turbines* **8** and possibly also in a stirling engine ..." (see col. 5, lines 43-45, emphasis added). Hoffjann goes on to state that "water treatment operations or processes ... are performed by using the exhaust or waste heat *of the high temperature fuel cell* or cells" (see id., lines 60-62, emphasis added). Thus, teachings of heat recovery in Hoffjann relate to the exhaust heat of a *fuel cell*, and, indeed, there is no heat input to Hoffjann's heat exchanger from a thermal cycle engine.

By way of contrast, amended claims 1, 7 and 8 are based on heat from a *thermal cycle engine* (not from a fuel cell) being used for insulating the head space about a still. Claim 5 requires that the exhaust heat of a thermal cycle engine be used to preheat the source water prior to vaporization in a still. In none of these cases is there any pertinent teaching in Hoffjann, let alone anticipation. Consequently, Applicants respectfully submit that claims 1-2, 4-5 and 7-12 are not anticipated by the '314 patent, and thus request withdrawal of the 35 U.S.C. § 102(e) anticipation rejections.

35 U.S.C. § 102 (b) Rejections – Anticipation

Claims 1-2, 4-5, 7 and 9-11 are rejected as being anticipated by US 4,776,171 to Perry et al. (hereinafter "the '171 patent").

As disclosed in the '171 patent, the water purifier of the self-contained renewable energy system, and methods of using same, employ a reverse osmosis water purifier (see the description of Figures 1-2 at col. 4, lines 53-55 and the description of Figures 13 and 14 at col. 19, line 50 - "Reverse Osmosis Desalinization System" - through col. 20, line 67). In contrast, as recited in amended claims 1 and 7, the methods of the instant application employ a "water distillation unit" (see actions b – d of claims 1 and 7).

Similarly, amended claim 8 is directed to a system for purifying water in an ambient environment comprising *a water distillation unit*, an input for receiving water and a conduit for conveying "heat output of the thermal cycle engine *to the water distillation u*nit ...." As was detailed for amended claims 1 and 7 above, amended claim 8 recites a system that comprises a

*water distillation unit* for the water treatment operations or processes, not a reverse osmosis water purifier, as taught in the '171 patent.

Moreover, nowhere is there a teaching, or suggestion, for the reverse osmosis water purifier of the '171 patent to be replaced with any other type of water purifier, particularly a water distillation unit. As such, Applicants respectfully submit that claims 1-2, 4-5, 7 and 9-11, directed to a system comprising, or methods using, a water distillation unit, are not anticipated by the '171 patent which requires a reverse osmosis water purifier in the system and methods taught therein. Therefore, Applicants request withdrawal of the 35 U.S.C. § 102(b) anticipation rejections based on the '171 patent.

35 U.S.C. § 103 (a) Rejections – Obviousness

Claims 1-12 are rejected as being obvious with respect to US 6,536,207 to Kamen et al. (hereinafter "the '207 patent) in view of US 4,776,171 to Perry et al. ("the '171 patent").

The '207 patent to Kamen et al. discloses an auxiliary power system for providing electrical power, not for removing contaminants from water, as claimed in the instant application, that includes an external combustion engine coupled to a generator, with both being disposed within a housing. The thermal energy generated by the external combustion engine may be used to heat the atmosphere surrounding the housing (see the Abstract of the '207 patent, and throughout the disclosure).

In contrast, the presently claimed invention is directed to methods for removing contaminants from water, and a water distillation system, "in an ambient environment" – i.e., an environment that is not heated by the thermal energy (heat output) generated by the combustion engine. In the amended claims 1, 7 and 8 of the instant application, the heat output from the thermal cycle engine is instead used to heat the water purification unit "in such a manner as to prevent heat flow from the water distillation unit to the ambient environment" (see action d. of amended claims 1 and 7, and the last wherein clause of claim amended 8). As detailed above, the '171 patent to Perry et al. discloses a self-contained renewable energy system and methods of use thereof, which employ a reverse osmosis water purifier. There is no suggestion in either of the references themselves (the '207 patent or the '171 patent) to combine them. And, if the combination is made, all the elements of amended claims 1, 7 and 8 are not present in the

combination of references, and so the systems and methods disclosed in the '207 and '171 patents would require modification to arrive at the presently claimed invention.

But, there is no suggestion in either the references themselves, or the knowledge generally available in the art, to modify the disclosure of the '207 and '171 patents, if so combined, to arrive at methods for removing contaminants from water in an ambient environment wherein the heat output of the thermal cycle engine is used to supply "heat to the water distillation unit in such a manner as to prevent heat flow from the water distillation unit to the ambient environment", as recited in amended claim 1, or for a water distillation system with the same limitations, as recited in amended claim 8.

For at least those reasons, Applicants respectfully submit that the pending claims, directed to a method for removing contaminants from water at ambient temperature using heat output from a thermal cycle engine to heat a water distillation unit while preventing heat flow to the ambient environment, are not obvious with respect to the '207 patent , which discloses an auxiliary power system that directs thermal energy from a combustion engine coupled to a generator within a housing to heat the atmosphere surrounding the housing, in view of the '171 patent, which requires a reverse osmosis water purifier. Therefore, Applicants request withdrawal of the obviousness rejections under 35 U.S.C. § 103(b) based on the '270 patent in view of the'171 patent.

Non-Statutory Double-Patenting Rejection

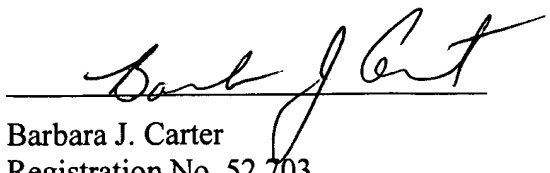
Claims 1-12 are rejected over the claims of either co-pending Application No. 10/713,617 or 10/713,591 in view of Perry et al. Applicants herewith terminally disclaim co-pending applications no. 10/713,617 and 10/713,591, as of the time said applications issue as patents. Therefore, Applicants respectfully request withdrawal of the provisional non-statutory obviousness-type double-patenting rejections based on the 10/713,617 and 10/713,591 applications.

For at least the reasons detailed above, Applicants respectfully submit that all claims presently in the application are believed to be allowable over the art of record and early notice to that effect is respectfully solicited.

It is believed that no fee is required; however, if any fees are required for the timely consideration of this application, please charge deposit account number 19-4972. The Examiner

is requested to telephone the undersigned if any matters remain outstanding so that they may be resolved expeditiously.

Respectfully submitted,



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September 5, 2006

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